

APPENDIX A - LYME DISEASE PROGRAM POLICY

INTRODUCTION

Director's Order #50B: Occupation Safety and Health, authorizes the Associate Director, Park Operations and Education, to exercise the authority of the Director to develop and manage the Service's occupational safety and health program, and to provide detailed information on specific implementation requirements and strategies for the program. This appendix to Reference Manual #50B is one in a series of more detailed documents that supplement the guidance found in Director's Order #50B. It includes both required and recommended practices and procedures to help us prevent, screen, and treat Lyme Disease among our employees.

A. SOURCES OF INFORMATION FOR THIS APPENDIX

1. Occupational Safety and Health Act (OSHA) 1970-Public Law 91-596 Section 19 – Federal Agency Safety and Health Program.
2. 29 CFR 1960 Basic Program Elements for Federal Employees, Occupational Safety and Health Programs.
3. 485 DM (Department of the Interior Manual).
4. Centers for Disease Control (CDC) and Prevention. Prevention of Lyme disease through active Immunization: recommendations for the Use of Lyme Disease Vaccine, Recommendations of the Advisory Committee on Immunization Practices (ACIP). Morbidity and Mortality Weekly Report (MMWR); 1999:8 (RR07): 1-7 (June 4, 1999).
5. Point Paper recommendations for Lyme Disease Risk Management in the National Park Service, by Commander George H. Vaughan, Jr., Southeast Region Public Health Service Consultant, June 1999.

B. REQUIREMENTS FOR AN EFFECTIVE EDUCATION, AWARENESS, AND IMMUNIZATION PROGRAM

1. Develop and implement a Servicewide Lyme disease (LD) education and awareness (prevention) program to reduce the risk of Lyme disease in all Service employees, Job Corps members, Youth Conservation Corps (YCC), volunteers, Service family members, visitors, and others at National Park units.
2. Personal protective clothing and equipment, for example; gloves, insect repellants, and tick removal instruments; will be identified by supervisors and employees to prevent or reduce the job hazard of tick vector disease transmission. Employees will use protective clothing and equipment provided.
3. Operating units within specified Centers for Disease Control (CDC) "Lyme disease risk areas" will also develop and implement Employee Lyme Disease Immunization Programs.
4. Identify employees at risk for Lyme disease based upon occupational exposure to Lyme disease vectors, vector (tick) habitat sites, and work tasks. This risk and exposure assessment

methodology will be used to identify Lyme disease vaccination eligibility. (The methodology is similar to the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Program risk assessment component.)

5. Vaccinations will be offered, at no cost, only to employees determined to be at high or moderate risk of exposure to the Lyme disease tick vector. Employees must sign a Vaccination Acceptance/or Declination Form, (Attachment A), for voluntary vaccination. Covered employees, who do not wish to receive the vaccine, must sign a Declination Form. Declination does not prevent a covered employee from receiving the vaccination at a later date.

6. Operating units in high or moderate Lyme disease risk areas will develop specific strategies to inform the public (visitors), contractors, concessionaires, and others, of disease risk.

C. RESPONSIBILITIES

1. Park management will identify the person(s) responsible for development of the Lyme Disease Program training and education component.

2. Superintendents, Park Unit Managers, and Safety Officers or Communicable Disease point-of-contact will determine if employees in the unit are at risk of Lyme disease. They will receive assistance and guidance from medical care providers, Regional Safety Managers, and NPS Public Health Service Consultants, in determining employee risk

3. Attachment B is a color-coded map that illustrates established and reported distribution of Lyme disease vectors, by county in the United States. The map should be used to assist in the determination of employee risk. It can be downloaded in adobe format from the CDC web site, <http://www.cdc.gov/ncidod/dvbid/tickmap.htm>.

4. Supervisors will identify employees at risk and offer a Federal Drug Administration (FDA) approved vaccine, based upon job risk and geographic location, and provide follow-up on the vaccination status.

5. Lyme disease vaccinations will be offered only to employees determined to be at high or moderate risk **and** who meet the outdoor work and frequency criteria. Work in the high or moderate geographic risk areas must be as identified by the Centers for Disease Control (CDC), or appropriate state, county, or local health agencies.

6. Regional Public Health Service Consultants will consult state health departments, having advisory jurisdiction over Lyme disease and illness, regarding concern of additional geographical regions or risk areas not defined, or generalized, (counties, etc.) in the CDC map. Addition of geographical areas by park units or sites, not currently identified by the CDC, must be based on this consultation.

7. Employee education and awareness training records, risk categories, vaccination consent forms and immunization records will be maintained in the Employee Medical Records File in accordance with the Privacy Act and other applicable regulations. These records must be transferred at the same time as Official Personnel Files, when a change of duty station occurs. Contact your local or Regional Human Resources Office for assistance.

8. Employee Medical Records must be provided upon request, to employees and to others with written consent of the employee, in accordance with 29 CFR1910.1020. Reference Manual #50B, Chapter 11, Occupational Health (Industrial Hygiene) and Medicine (Medical Surveillance), provides additional requirements for maintenance and transfer of Employee Medical Records, occupational health, provision of qualified medical providers, training, and related issues.

9. Park managers and employees are encouraged to review a position paper: **Lyme Disease Risk Management in the National Park Service**, by Commander George Vaughan, Jr., Southeast Region Public Health Consultant. It is an excellent resource and provides background information on Lyme disease vectors, disease transmission, and the LYMERix™ Vaccine. See the Risk Management Web Page location, <http://www.nps.gov/riskmgmt/>.

D. AWARENESS AND PREVENTION TRAINING INFORMATION

1. All Park Service units, sites, and offices must offer employees LD educational information and teach preventive measures to increase awareness, and reduce or prevent disease transmission.

2. Park units within the defined CDC geographic risk areas (high, moderate, or low), will emphasize and provide all employees general Lyme disease awareness and risk reduction training and information.

3. Employees at high or moderate job risk of Lyme disease will be offered the vaccination at no cost and provided mandatory training. Ideally, education and training should be provided prior to vaccination.

4. At a minimum, the education and training program content below should be provided for high and moderate job risk employees. However, it may be modified to provide employee awareness training for other job hazard risk categories, visitors, and others.

5. Basic Lyme Disease Education and Training

- a) An explanation of LD and other vector-borne diseases
- b) Signs and symptoms of LD
- c) Prevention of LD (includes avoidance of tick habitat, use of protective clothing and insect repellants, and self-inspections for ticks)
- d) Risks of contracting LD
- e) Identification of ticks that cause disease
- f) Tick removal procedures
- g) Diagnostic procedures for LD
- h) Life cycle of the tick as it relates to LD transmission
- i) Information on LYMERix™ and other FDA approved vaccines
- j) Lyme Disease Awareness, Prevention (risk reduction), and Education brochures, etc., for employees, family members, visitors and other none NPS employees. (See Attachment C or the web site: http://www.cdc.gov/ncidod/dvbid/lyme_QA.htm for additional CDC Lyme Disease Questions and Answers Information.)

6. Park units and sites in high and moderate Lyme Disease geographic areas, should

communicate to (inform) park family members, visitors, concessionaire and contract employees, and others in the park environment, of the risk of Lyme disease and illness. Official park brochures, newsletters, written announcements, Interpretative Ranger briefings, and web pages are communication methods that may be used to provide disease awareness and risk reduction information

E. TRAINING AND VACCINATION TABLE BASED ON LYME DISEASE JOB RISK CATEGORIES:

Lyme Disease Job Risk Category	High Risk Geographic Area	Moderate Risk Geographic Area	Low Risk Geographic Area
High Job Risk	HIGH (info & train/ offer vaccine)	HIGH (info & train/ offer vaccine)	LOW (info & train)
Moderate Job Risk	MODERATE (info & train/ offer vaccine)	MODERATE (info & train/ offer vaccine)	LOW (info & train)
Low/No Job Risk	LOW (info & train)	LOW (info & train)	LOW (info & train)

1. **ALL** NPS employees should be provided information and training, including risk reduction methods and the signs and symptoms of Lyme disease. Employees in high or moderate risk areas and who perform work tasks associated with LD transmission risks, must evaluate the job risk with supervisors, to determine eligibility for the vaccination.

2. Park units and sites in high or moderate geographic risk areas, (See Attachment B, CDC LD Vectors Map, U.S.), will establish employee listings, based upon job risk (work tasks) to assess employee training, education, prevention, and vaccination requirements.

3. Lyme Disease Job Risk Categories and Criteria

LD job risk categories will be defined as: a) High Disease Risk, b) Moderate Disease Risk, or c) No or Low Disease Risk, when associated with specific work tasks that are likely to expose the employee to LD vectors.

Employees or persons who do not meet the Job Risk Category criteria for vaccinations at no cost, may receive a FDA approved vaccine through their personal health care provider at their expense, if desired. All employees should seek prompt diagnosis and treatment by health care providers if signs or symptoms of Lyme disease develop despite job risk category or vaccination status.

F. JOB TASK CRITERIA TO DETERMINE EMPLOYEE DISEASE RISK

1. High Disease Risk

a) Perform outdoor work in areas of high or moderate geographic risk during Lyme Disease transmission season. (Transmission peaks from April through July, when ticks are in nymph stages and actively feeding.) and;

b) engage in work activities, (for example, outdoor property maintenance, resource specialist, regulatory, protective and interpretative rangers, or recreational activities), in which they are exposed to tick infested areas (tall grass or wooded areas, brushy undergrowth, leaf litter.

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They may also live or work in close proximity to wild host animals, such as deer, mice, and birds, that result in frequent or prolonged exposure to tick infested habitat. Pets taken outdoors in endemic areas are additional sources for tick transmission of vector-borne diseases.

c) Lyme disease vaccine is offered to employees who perform the above work or similar job tasks.

d) They will be provided, before vaccination, LD training, awareness, and preventive techniques, in addition to education and training on the vaccine benefits, risks, and related information.

2. Moderate Disease Risk

a) perform outdoor work in areas of high or moderate risk during Lyme Disease transmission season, and

b) are exposed to tick-infested habitat, but exposures are neither frequent nor prolonged.

c) Lyme disease vaccine may be offered, but the benefit of vaccine beyond basic personal preventive protection and early diagnosis and treatment is uncertain.

d) They will be provided, before vaccination, LD training and education on awareness, prevention, and the vaccine benefits, risks, and related information.

3. Low or No Job Disease Risk

a) perform work in areas of high or moderate risk during Lyme disease transmission season BUT have minimal or no exposure to tick infested habitat.

b) work in areas of low geographic risk during Lyme disease transmission season.

c) Lyme disease vaccine is **not recommended or offered** when there is low or no risk to employees for disease transmission. They may be provided training and education on awareness, prevention, and general vaccine information.

G. SEASONAL AND TEMPORARY DUTY EMPLOYEES

Seasonal and temporary duty assigned employees, for example, rangers and fire fighters, in geographic areas of high or moderate Lyme disease risk, during the disease transmission season, must be evaluated for inclusion into the program. Factors to consider include the frequency and duration of potential exposure to tick infested habitat and other criteria considered for permanent duty employees in these park areas. If frequent or long exposure to tick infested habitat occurs, vaccination should be considered.

Based upon the job evaluation, risk assessment, and geographical location, these employees should be offered the Vaccine. Training for these employees will include Lyme disease awareness, risk reduction measures, and information about vaccine effectiveness. These employees should also seek prompt diagnosis and treatment by health care providers, if signs or symptoms of Lyme disease develop despite job risk category or vaccination status.

H. VACCINATION PROGRAM IMPLEMENTATION

1. Based upon CDC, National Park Service Public Health, and Risk Management Office recommendations, the National Park Service Policy will be to institute a selective immunization

program for personnel, established on Park geographical risk assessment and individual risk. **The CDC Advisory Committee for Immunization Practices (ACIP) recommends immunization with the only current Food and Drug Administration (FDA) approved vaccine, LYMERix™.**

2. Any FDA approved vaccine, will be offered at no cost to qualified employees by the benefiting account. Employees who accept or decline vaccination are required to sign a consent form (see Attachment A). Park units will be responsible for identifying medical care providers to administer the vaccine and manage employee medical records as required in the OSHA 1910.1030, Bloodborne Pathogens Program.

3. Three doses of the LYMERix™ vaccine are administered by intramuscular injection. The initial dose is followed by a second dose one (1) month later, and dose three, given twelve (12) months following the initial dose. Three 30mcg/0.5 ml concentration vaccine dosages have been shown to be approximately 78% effective.

4. The optimal (best) vaccine administration time period for the second dose (year 1) and third dose (year 2), is several weeks before the April tick transmission season begins. The duration of immunity following vaccination is currently unknown; it appears that booster doses may be required as frequently as every 18-24 months.

5. The vaccine efficacy is only 78%; therefore it is very important that other tick prevention and protection measures are also practiced. **See the Public Health Service D.O. #83 Reference Manual, for additional preventive information.** The Public Health Service and Risk Management Programs will be responsible for Lyme Disease informational updates and risk management strategies.

I. INFORMATION ABOUT THE VACCINE AND OTHER CONCERNS

1. Vaccination Use and Age of Individual: Safety and efficacy has not been determined for the LYMERix™ vaccine concerning individuals over 70 years of age or under age 15, and is therefore only recommended for those between age 15 and 70.

2. Vaccination Use and Pregnancy: Animal reproductive studies have not been conducted. It is not known whether LYMERix™ can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Therefore, the status of pregnancy should be determined prior to obtaining the vaccine. *It should be given during pregnancy only if really needed.* Health care providers are encouraged to register pregnant women who receive LYMERix™ in the SmithKline Beecham Pharmaceuticals vaccination pregnancy registry, by calling 1-800-366-8900, ext. 5231. If an employee becomes pregnant after the 1st or 2nd shot, it is recommended that the vaccine series is halted and reinstated starting with the 1st shot after the pregnancy is concluded.

3. Persons with immunodeficiency: Persons with immunodeficiency (compromised immune systems) were excluded from the safety and efficacy trials, therefore the vaccine is not recommended for these persons by the manufacturer.

4. The LYMERix™ vaccine: Should not be administered at the same time with other vaccines

since the safety and efficacy of this procedure has not been established. If more than one vaccine is administered, use separate syringes and separate injection sites.

5. Booster shots: At this time protective immunity past the 12-month mark has not been established. This data should become available in the next year, which should assist in determining if booster shots will be needed.

6. Vaccine series dosage schedule: Currently the FDA has approved a dosage schedule of zero, one and twelve months (an initial dose, another at one month, and the third at 12 months). An accelerated dosing schedule is currently being evaluated and FDA approval may come within the next year.

7. As with any vaccine, LYMERix™ should not be given prior to completing a medical screening/questionnaire for the individual by the medical care provider administering the vaccine. SmithKline Beecham supplies a sample medical questionnaire and prescribing information data sheet with the vaccine. A sample medical questionnaire is provided as Attachment E.

8. When it has been determined that Lyme disease was causally related to employment factors, all medical expenses incurred will be covered by the Federal Employees' Compensation Act (FECA). The burden of proof is the responsibility of the employee, per the FECA regulations, as administered by the Office of Workers' Compensation Programs (OWCP) of the Department of Labor. Medical costs for treatment incurred by the employee, for non-occupationally related cases of LD, will not be processed for payment by OWCP, and is the responsibility of the employee.

J. VACCINATION ADMINISTRATION

Parks may obtain and provide the vaccine in a manner that best fits their operational requirements. A park superintendent or designated Program Coordinator may select one or any combination of the delivery processes below.

1. Obtain and administer the vaccine by using the current occupational health or medical care provider, which may be contract support. (Note: In May, 1999, the National Capital Region arranged for vaccine administration by a Federal Occupational Health Services (FOHS) Nurse at \$42.00 per hour, plus \$53-\$60 cost for the vaccine. SmithKline Beecham has supplied the vaccine at a substantial discounted Department of the Army price, for the U.S. Army Corps of Engineers, currently \$35.78 per dose. A tracking mechanism is included, which assists in ensuring the employees receive their follow-up shots. Otherwise this may require significant planning, purchases, and in-house resources to administer.)

2. Purchase the vaccine directly from SmithKline Beecham via the Customer Satisfaction Department at the following F.S.S. Prices:

LYMERix™ 30 mcg/0.5 ml Tip Lok syringes in packs of 5: \$178.94

LYMERix™ 30 mcg/0.5 ml single dose vial in packs of 10: \$354.37

The above equates to a price of \$35.79 per dose for the syringes. The direct order telephone

number is 1-800-877-1158. Orders can also be faxed to 1-215-751-4759.

3. The Department of Health and Human Services (DHHS) FOHS has LYMERix™ on their formulary. They can provide immunization services either at park sites or at their health clinics. The charge for complete immunization services is \$64.00 per person at their clinic or \$53.00 per dose plus a labor charge if FOHS goes to the park site. If government agencies have immunization services as part of their service agreement, this may eliminate the vaccination charges and the cost would be only for the vaccine.

4. The DHHS Federal Supply Service Center at Perry Point can ship LYMERix™, currently charging FOHS a price of \$41.00 per dose.

5. SmithKline Beecham can facilitate onsite vaccination programs via contact with their state and local Vaccine Account Managers. The company has several contracts with nationwide occupational medical groups who will perform immunizations at operations' locations. Any NPS site or facility that wishes to take advantage of this option may call Alain Port, National Relations Manager – Vaccines, at 1-804-754-0343. He will obtain pertinent information and have the Vaccine Account Manager contact the park site or facility office directly to implement the program and ensure the Department of the Army price.

To meet legal requirements for the F.S.S. price, billing is handled in two parts: 1) An invoice from SB for the vaccine; and 2) An invoice from the occupational medical group for the health services. The contact for this alternative program is Newport Alliance ATTN: Dick Radebach, 1-800-223-2133.

This service cost is uniform across the country. The charge is \$15.00 per vaccinee with a minimum of 15 persons being vaccinated per site visit. The charge is a flat fee of \$225.00 less than 15 vaccinees per "clinic" at the site. Some variances may be dependent on remoteness of a location. All support materials, including the LYMEtrax™ program are included free of charge. An education program (prevention, Lyme disease signs and symptoms, etc.,) can also be provided free of charge. Please contact Alain Port at 1-804-754-0343, if necessary.

6. Allow covered employees to go to a service provider of their choice, i.e., family physician. This would allow the flexibility of not having to provide the medical service administration, but may entail more supervisor interaction to ensure employee follow-up for the three-shot series time schedule. In addition, the cost to the general medical community is approximately \$48 per shot. Local physicians may be charging significantly more than that to include injection fee (upwards of \$70 per shot).

K. DEFINITIONS

1. Lyme disease: An infectious, seasonal disease named after Lyme, Connecticut, where it was identified in 1975. A corkscrew-shaped spirochetal microorganism transmitted by a host tick is responsible for the disease. See Appendix C, Lyme Disease Questions and Answers, and the Point Paper by Commander George Vaughan, Public Health Service Consultant.

2. Frequent or Prolonged Exposure: Constant or regular exposure (for example, five hours per week) in tick infested areas during Lyme disease season (see definitions below).

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3. Activities presenting exposure potential: Activities that consist of work that is performed in tick infested areas (defined below). For example; an employee who works outdoors and walks on paved paths without any contact with shrubs, long grasses, leaf litter, etc., **does not** perform an activity that presents an exposure potential, whereas an employee who walks through or handles long grasses, shrubs, etc., **does**.
4. Tick infested areas: Areas generally regarded to contain ticks, brushy, grassy (longer grasses) wooded areas, leaf litter, shrubs, etc.
5. Lyme disease season: Generally regarded as April through August in most areas. Consult the state health department for more specific information as required.

L. ATTACHMENTS

Attachment A (Vaccination Acceptance/Declination Form)
Attachment B (CDC Lyme Disease Vector Map)
Attachment C (Lyme Disease Questions & Answers)

ATTACHMENT A

NPS Vaccination Acceptance / Declination Form
Lyme Disease Vaccine - LYMERix™

The Disease: Lyme disease is an infection by spirochetal bacterium called *B. Burgdorferi* that is transmitted by the bite of deer ticks (*Ixodes* specie). The infection produces a multistage, multisystem disease that can affect major body systems and organs such as the cardiovascular system, nervous system, skin, muscles, joints, and eyes. Early disease is often difficult to diagnose leading to delayed treatment and complications.

The Vaccine: LYMERix™ vaccine contains a lipoprotein from the outer surface layer of the organism that causes Lyme disease. The vaccine causes antibodies to be produced against this protein. When a tick bites a person, the tick ingests antibodies from their blood. The antibodies attack and kill the Lyme disease organisms while they are in the tick. Thus the Lyme disease organisms never have a chance to infect the vaccinated person who is bitten. The vaccine does not contain any substance of animal or human origin and can not cause Lyme disease.

The vaccine is effective and safe and is recommended for those who have never had Lyme disease. Because natural infection may not result in effective immunity, the vaccine is also recommended for those who have had Lyme disease previously. Three injections are necessary to provide maximum immunity. The vaccine may not protect 100% of individuals. The need for booster doses is under study.

Side Effects: The incidence of side effects is less than 1%. The most common side effect is pain at the site of injection. Less common side effects include joint pains, muscle pains, head aches, fatigue aches, fever, and flu like symptoms. If a person who receives the vaccine experiences an allergic or other serous reaction, they should be seen promptly by a doctor.

Special Precautions: LYMERix™ vaccine should not be given to anyone with known hypersensitivity to the vaccine.

Acceptance:

I understand that due to my occupational exposure to the Lyme disease vector that I may be at risk of acquiring Lyme disease. I have been given the opportunity to be vaccinated with the Lyme disease vaccine, at no charge to me.

I wish to receive the Lyme disease vaccine. **Employee Name:** _____

Employee Signature and Date: _____ **Birth Date:** __/__/__

Supervisor's Signature and Date: _____

Declination: I understand that due to my occupational exposure to the Lyme disease vector that I may be at risk of acquiring Lyme disease. I have been offered the opportunity to be vaccinated with the Lyme disease vaccine, at no charge to myself. However I wish to decline the Lyme disease vaccine. I understand by declining this vaccine, I continue to be at risk of acquiring Lyme disease. If in the future I continue to have occupational exposure to the Lyme disease vector and I want to be vaccinated with the Lyme disease vaccine, I can receive the vaccination series at no charge to me.

Employee's Signature and Date: _____

Supervisor's Signature and Date: _____

.....
 (Office Use Only)

Primary Immunization:

Date	Location	Injection Site	Mfg. & Lot #	Initial
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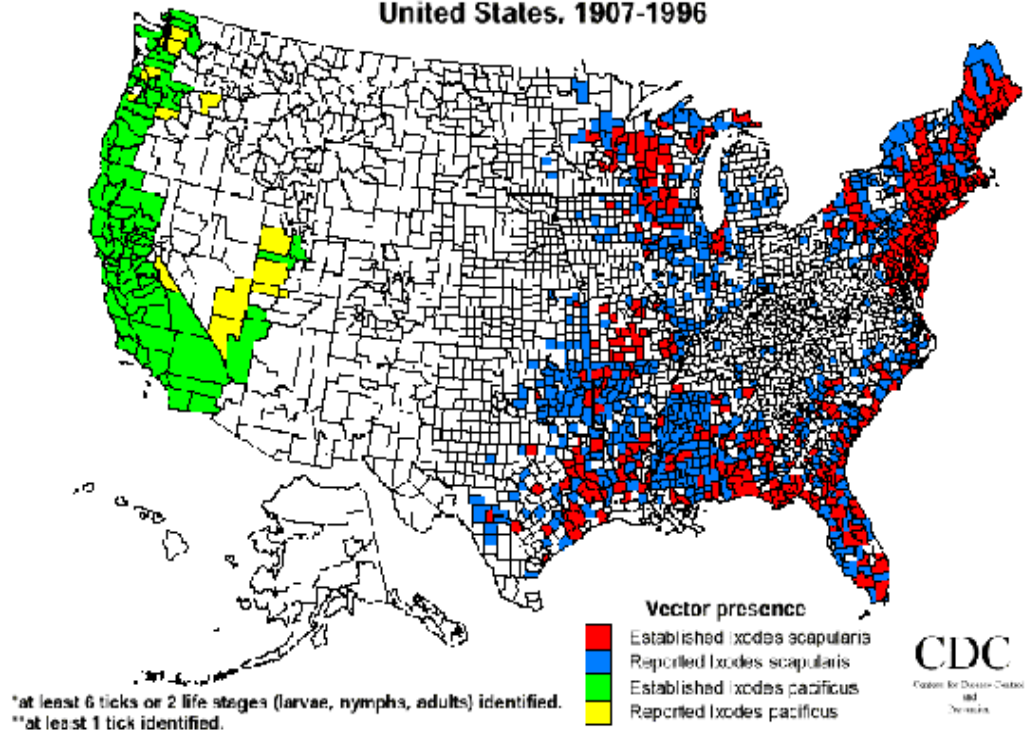
1) _____

2) _____

3) _____

ATTACHMENT B
COLOR-CODED MAP OF LYME DISEASE VECTORS
IN THE UNITED STATES

Established* and reported distribution of the Lyme disease vectors
Ixodes scapularis (l. dammini) and *Ixodes pacificus*, by county,
United States, 1907-1996**



ATTACHMENT C

Lyme Disease: Questions and Answers

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC) Division of Vector-Borne Infectious Diseases

Q. How is Lyme disease transmitted?

A. By ticks (deer ticks and western black-legged ticks) that become infected with bacteria that cause Lyme disease.

Q. How do people get Lyme disease?

A. By the bite of ticks infected with the Lyme disease bacteria.

Q. What is the basic transmission cycle?

A. Immature ticks become infected by feeding on small rodents, such as the white-footed mouse, and other mammals that are infected with the bacteria *Borrelia burgdorferi*. In later stages, these ticks then transmit the Lyme disease bacteria to humans and other mammals during the feeding process. The Lyme disease bacteria are maintained in the blood systems of small rodents.

Q. Could you get Lyme disease from another person?

A. No, Lyme disease bacteria are NOT transmitted from person-to-person. For example, you cannot get the bacteria from touching or kissing a person who has Lyme disease, or from a health care worker who has treated someone with the disease.

Q. What are the signs and symptoms of Lyme disease?

A. Within days to weeks following a tick bite, 80% of patients will have a red, slowly expanding “bull’s-eye” rash (called erythema migrans), accompanied by general tiredness, fever, headache, stiff neck, muscle aches, and joint pain. If untreated, weeks to months later some patients may develop arthritis, including intermittent episodes of swelling and pain in the large joints; neurologic abnormalities, such as aseptic meningitis, facial palsy, motor and sensory nerve inflammation (radiculoneuritis) and inflammation of the brain (encephalitis); and, rarely, cardiac problems, such as atrioventricular block, acute inflammation of the tissues surrounding the heart (myopericarditis) or enlarged heart (cardiomegaly).

Q. What is the incubation period for Lyme disease?

A. For the red “bull’s-eye” rash (erythema migrans), usually 7 to 14 days following tick exposure. Some patients present with later manifestations without having had early signs of disease.

Q. What is the mortality rate of Lyme disease?

A. Lyme disease is rarely, if ever, fatal.

Q. How many cases of Lyme disease occur in the U.S.?

A. Lyme disease is the leading cause of vector-borne infectious illness in the U.S. with about 15,000 cases reported annually, though the disease is greatly under-reported. **90% of reported cases of Lyme disease, during the past ten years, occurred in ten states:**

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State

Total Number Cases Reported 1989-1998

Annual Incidence per 100,000 persons

New York

39,370

21.6

Connecticut

17,728

54.2

Pennsylvania

14,870

12.3

New Jersey

13,428

16.9

Wisconsin

4,760

9.3

Rhode Island

3,717

37.5

Maryland

3,410

6.8

Massachusetts

2,712

4.5

Minnesota

1,745

3.8

Delaware

1,003

14.0

Q. How is Lyme disease treated?

A. According to treatment experts, antibiotic treatment for 3-4 weeks with doxycycline or amoxicillin is generally effective in early disease.

Cefuroxime axetil or erythromycin can be used for persons allergic to

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penicillin or who cannot take tetracyclines. Later disease, particularly with objective neurologic manifestations, may require treatment with intravenous ceftriaxone or penicillin for 4 weeks or more, depending on disease severity. In later disease, treatment failures may occur and retreatment may be necessary.

Q. Is the disease seasonal in its occurrence?

A. Yes, Lyme disease is most common during the late spring and summer months in the U.S. (May through August) when nymphal ticks are most active and human populations are frequently outdoors and most exposed.

Q. Where is Lyme disease most common?

A. Click on the map at: <http://www.cdc.gov/ncidod/dvbid/tickmap.htm> that shows reported cases of Lyme disease in 1997 by patient's county of residence. Generally, the Lyme disease is endemic in the northeastern and upper midwest states.

Q. Who is at risk for getting Lyme disease?

A. Persons in endemic areas who frequent sites where infected ticks are common, such as grassy or wooded locations favored by white-tailed deer in the northeastern and upper midwest states, and along the northern Pacific coast of California.

Q. Who should be vaccinated against Lyme disease?

A. Below is a summary table of abbreviated recommendations for use of recombinant outer-surface protein A vaccine (LYMERix™) for the prevention of Lyme disease, from the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

The complete recommendations are published in the Morbidity and Mortality Weekly Report, Recommendations and Reports series, June 04, 1999;48(RR07):1-17.

Summary of CDC Advisory Committee on Immunization Practices (ACIP) Recommendations Regarding LYMERix™ Vaccine

Persons who reside, work, or recreate in areas of high or moderate risk

Persons aged 15-70 years whose exposure to tick-infested habitat is frequent or prolonged

Should be considered

Persons aged 15-70 years who have some exposure to tick-infested habitat but whose exposure is neither frequent nor prolonged

May be considered

Persons whose exposure to tick-infested habitat is minimal or none

Not recommended

Travelers to areas of high or moderate risk

Travelers aged 15-20 whose exposure to tick-infested habitat is frequent or prolonged

Should be considered

Children aged < 15 years

Not recommended

Pregnant women

**Healthcare providers are encouraged to register
vaccinations of pregnant women by calling SmithKline Beecham, toll free, at (800) 366-8900, ext. 5231**

Persons with immunodeficiency

Not recommended

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Persons with musculoskeletal disease

Limited data available

Limited data available:

Persons with previous history of Lyme disease

Persons aged 15-70 years with previous uncomplicated Lyme disease who are at continued high risk

Should be considered

Persons with treatment-resistant Lyme arthritis

Not recommended

Persons with chronic joint or neurologic illness related to Lyme disease and persons with second- or third degree atrioventricular block

No available data

Other Recommendations:

Vaccine schedule

Three doses administered by intramuscular injection

Initial dose, followed by a second dose 1 month later, followed by a third dose 12 months after the first dose

Second dose (year 1) and third dose (year 2) administered several weeks before the beginning of the disease-transmission season (usually April)

Boosters

Existing data suggest boosters might be needed, but additional data is required to make recommendations regarding booster schedules.

Simultaneous administration with other vaccines:

Additional data needed

If simultaneous administration is necessary, use separate syringes and separate injection sites

Division of Vector-Borne Infectious Diseases
National Center for Infectious Diseases
Centers for Disease Control and Prevention
P.O. Box 2087
Fort Collins, Colorado 80522

Telephone: (970) 221-6400

Fax: (970) 221-6476

Email: dvbid@cdc.gov